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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,665	08/24/2001	Olivier Ducreux	PET-1948	1027
23599	7590	02/12/2004	EXAMINER	
MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			GRIFFIN, WALTER DEAN	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/935,665

Applicant(s)

DUCREUX ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,23-28 and 30-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 58 and 59 is/are allowed.
- 6) ☒ Claim(s) 1,2,23,30-44,50-57,60 and 61 is/are rejected.
- 7) ☒ Claim(s) 24-28 and 45-49 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

The rejections under 35 USC 112, second paragraph, and 35 USC 103 as described in paper 4 mailed on June 4, 2003 have been withdrawn in view of the amendment filed on September 3, 2003. The applied references do not disclose or suggest separation sections that produce the claimed streams.

A new rejection follows.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 23, 30-44, 50-57, 60, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stem et al (US 4,982,048) in view of Zinnen et al. (US 5,744,684).

The Stem reference discloses a process for producing components for a refinery gasoline pool. The process comprises separating a C6+ stream that may contain C5- components in an adsorptive separation zone to produce a normal paraffin stream, a mono-methyl paraffin stream, and a di-branched stream. The mono-methyl branched paraffins and normal paraffin streams are then passed to an isomerization zone to produce an effluent comprising di-branched paraffins, mono-methyl branched paraffins, and normal paraffins. There may be two separate isomerization zones with the normal paraffins being isomerized in the first zone and the mono-methyl paraffins being isomerized in the second zone. Isomerization conditions include temperatures ranging from 200° to 400°C and pressures ranging from 10 to 40 bar (1 to 4 MPa). A catalyst and hydrogen are present in the isomerization zones. The adsorptive separation zone may contain a molecular sieve adsorbent. See column 3, line 55 through column 4, line 57; column 9, lines 14-53, 67, and 68; column 10, lines 1-15; column 11, lines 46-68; column 12, lines 1-22; and column 17, lines 9-33.

The Stem reference does not disclose the claimed adsorbent. The Stem reference also does not disclose that the whole of the effluent from the first isomerization zone traverses the second isomerization zone, does not disclose the relative locations of the zones as in claim 32, does not disclose distillation of the feed as in claims 35 and 36, does not disclose the eluent, and does not disclose all the isomerization conditions.

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The Zinnen reference discloses the use of EU-1 zeolite as an adsorbent to separate alkanes based on the branching of the alkanes. Normal alkanes are disclosed as being effective desorbents. See column 6, lines 12-32 and column 7, lines 8-32.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by utilizing the adsorbent of Zinnen because this adsorbent performs the desired separations of Stem and therefore would be expected to be effective in the process of Stem.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by passing the whole effluent from the first isomerization to the second because additional conversion would be expected thereby producing more of valuable, high octane product.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by locating the zones as in claim 32 because the process is a cyclic process and the locations of the zones would not affect the outcome of the process since the feed is ultimately passed through each zone.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by distilling the feed using the claimed devices because Stem discloses that the feed should contain certain types of hydrocarbons. Therefore, one of ordinary skill in the art would obtain a feed in any manner including the well-known technique of distillation.

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It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by using the claimed eluent because normal alkanes are effective as disclosed by Zinnen.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stem by utilizing the claimed isomerization conditions because one would select conditions that result in the effective isomerization of the feed.

#### *Allowable Subject Matter*

Claims 24-28 and 45-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 58 and 59 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for the indication of allowability is that the prior art of record does not disclose or suggest the claimed adsorbents.

#### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses isomerization and/or separation processes.

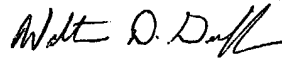
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447.

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The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG

February 6, 2004